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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/775,033
Filing Date: February 09, 2004
Appellant(s): WATTS ET AL.

Kerrie A. Laba
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 30, 2010 appealing from the Office action mailed June 30, 2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

Appeal 2009-003657.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1, 3-7, 9, 11-17, 19-22, and 24-32.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

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subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

5401001	Cook et al	3-1995
5496142	Fodor et al	3-1996
5645900	Ong et al	7-1997
1911787	Bartz	5-1933
3693935	Thauer	9-1972
4231341	Kuramoto et al	11-1980
3916943	Hester et al	11-1975

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 5, 9, 11-17, 26-29, and 31-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Cook et al.

Cook et al show a gas exhaust valve with a steel bearing 28 pressed into hole 52, a steel valve spindle 24 with a shoulder 24d, a plate 32, and ceramic washers 38, 40. Bellows 44 acts as a spring to bias washers 38, 40 into sealing engagement with opposite ends of the bearing. Washer 38 is read as being part of the valve spindle since

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shoulder 24D acts on it to work together to seal on the bearing. As to claim 5, 62 is read as a nut integrally mounted on the shaft. As to claims 11 and 12, Cook et al shows two embodiments of the plate, the first is read as eccentric and the second in Figures 10-12 is read as concentric. As to claim 27, the bearing 28 is disclosed as pressed into the bore 52 and is thus read as not requiring the crimp, which is seen as redundant. Both the bearing 28 and the hole 52 are read as of a "generally" constant diameter since the majority of the bearing and hole, at the center section of the bearing, are of constant diameter.

Claims 11-12 are, in the alternative, rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al.

In the event that Cook et al does not disclose both an eccentric and a concentric plate, Cook et al does disclose at least one of them. The use of the other is considered an obvious matter of design choice in that applicant has admitted that Figure 3 and Figures 4-5 are not patentably distinct.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al in view of Fodor et al.

Cook et al show the claimed valve except for a spring washer. Fodor et al show an Inconel spring washer for high temperature applications. It would have been obvious at the time the invention was made for one of ordinary skill in the art to substitute the spring washer of Fodor et al for the diaphragm spring of Cook et al under the rationale set forth in *KSR v. Teleflex*, U.S.____, 127 S. Ct. 1727, 82 U.S.P.Q. 2d 1835 (2007) that the simple substitution of one known element for another to obtain predictable results is

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an indication of obviousness. In this case the predictable result of such a substitution is that the washers 38, 40 would be biased to seal against the bearing in the high temperature environment of the exhaust gas valve.

Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al in view of Ong et al.

Cook et al show the claimed valve except for ceramic coatings. Ong et al teach a ceramic coating for, inter alia, bearings and teach multiple coatings of titanium nitride on a metal substrate. It would have been obvious at the time the invention was made for one of ordinary skill in the art to used such a plurality of coatings on a metal substrate in place of the ceramic washers of Cook et al under the rationale set forth in KSR v. Teleflex, U.S.____, 127 S. Ct. 1727, 82 U.S.P.Q. 2d 1835 (2007) that the simple substitution of one known element for another to obtain predictable results is an indication of obviousness. In this case the predictable result of such a substitution is washers that seal against the bearing.

Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al in view of Bartz.

Cook et al shows the claimed valve except for the conical secondary sealing and bearing surfaces. Bartz shows a similar valve with an integral bearing 17 and a bushing 45, which is read as a seal, having a conical shape and spring biased into a conical bearing surface, unlabeled, of the bearing, see Figure 3. It would have been obvious at the time the invention was made for one of ordinary skill in the art to have used such a conical sealing and bearing configuration as taught by Bartz with the valve of Cook et al

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to under the rationale set forth in *KSR v. Teleflex*, U.S.____, 127 S. Ct. 1727, 82 U.S.P.Q. 2d 1835 (2007) that the simple substitution of one known element for another to obtain predictable results is an indication of obviousness. In this case the predictable result is a seal against the bearing.

Claims 1, 3-5, 11-16, 24-28, and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thauer in view of Kuramoto et al (US 4,231,341).

Thauer shows the claimed exhaust gas valve except for a washer with a secondary sealing surface cooperating with a secondary bearing surface, a press fit bearing, and a bearing completely surrounded by the housing.

Kuramoto et al teach a valve of the same configuration with a washer 20 with a conical surface cooperating with a bearing surface of bearing 12, see Figure 3, which washer surface is read as a sealing surface in view of the sealing of washer 20 disclosed in Figure 2. Bearing 12 is press-fit into the its bore, is completely surrounded by the housing, is of a uniform diameter with the uniform diameter of the bore, and requires no other means of attachment. Washer 20 in the embodiment of Figure 3 centers the valve shaft.

It would have been obvious at the time the invention was made for one of ordinary skill in the art to have used a washer such as 20 of Kuramoto et al in the valve of Thauer to similarly seal against the bearing thereof and center the shaft.

It would have been obvious at the time the invention was made for one of ordinary skill in the art to use a press fit bearing as taught by Kuramoto et al in the valve of Thauer under the rationale set forth in *KSR v. Teleflex*, U.S.____, 127 S. Ct. 1727, 82

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U.S.P.Q. 2d 1835 (2007) that the simple substitution of one known element for another to obtain predictable results is an indication of obviousness. The disposition of such a bearing within the housing and in a uniform diameter bore is suggested by Kuramoto et al.

Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thauer in view of Kuramoto et al as applied above, and further in view of Cook et al.

Thauer, as modified, teaches the claimed valve except for using steel. Cook et al show a similar valve which use steel. It would have been obvious at the time the invention was made for one of ordinary skill in the art to have used steel as taught by Cook et al in the valve of Thauer under the rationale set forth in KSR v. Teleflex, U.S.____, 127 S. Ct. 1727, 82 U.S.P.Q. 2d 1835 (2007) that the simple substitution of one known element for another to obtain predictable results is an indication of obviousness.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thauer in view of Kuramoto et al as applied above and further in view of Fodor et al.

Thauer, as modified by Cook et al, show the claimed valve except for a spring washer. Fodor et al show an Inconel spring washer for high temperature applications. It would have been obvious at the time the invention was made for one of ordinary skill in the art to substitute the spring washer of Fodor et al for the spring of Thauer, as modified, under the rationale set forth in KSR v. Teleflex, U.S.____, 127 S. Ct. 1727, 82 U.S.P.Q. 2d 1835 (2007) that the simple substitution of one known element for another to obtain predictable results is an indication of obviousness. In this case the predictable

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result of such a substitution is that the washers 38, 40 would be biased to seal against the bearing in the high temperature environment of the exhaust gas valve.

Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thauer in view of Kuramoto et al as applied above and further in view of Ong et al.

Thauer, as modified, show the claimed valve except for ceramic coatings. Ong et al teach a ceramic coating for, inter alia, bearings and teach multiple coatings of titanium nitride on a metal substrate. It would have been obvious at the time the invention was made for one of ordinary skill in the art to used such a plurality of coatings with the bearings surfaces of Thauer, as modified, under the rationale set forth in *KSR v. Teleflex*, U.S.____, 127 S. Ct. 1727, 82 U.S.P.Q. 2d 1835 (2007) that the simple substitution of one known element for another to obtain predictable results is an indication of obviousness. In this case the predictable result of such a substitution is a face that seals against the bearing.

Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thauer in view of Kuramoto et al as applied above and further in view of Hester et al (US 3,916,943).

Thauer, as modified, shows the claimed device except for the primary seal being disposed in the bore housing the bearing. Hester et al teach a rotary valve with a valve shaft, or primary, seal bearing on a structure which forms a bearing, where the primary seal is disposed in the bearing bore. It would have been obvious at the time the invention was made for one of ordinary skill in the art to similarly disposed the primary seal of Thauer, as modified, in the bearing bore under the rationale set forth in *KSR v.*

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Teleflex, U.S.____, 127 S. Ct. 1727, 82 U.S.P.Q. 2d 1835 (2007) that the simple substitution of one known element for another to obtain predictable results is an indication of obviousness. In this case the predictable result is an effective primary seal.

(10) Response to Argument

Appellant argues that it is unreasonable to read elements 24, 36, and 38 collectively as a valve spindle and opines that such is equivalent to reading the housing or the bellows as a valve spindle. However, elements 24, 36, and 38 collectively function as a valve spindle in that they rotatably mount the valve blade and seal the journal bearing 28 against fluid leakage, which is analogous to the disclosed valve spindle and nothing at all like a housing or a bellows.

The specification does not explicitly define the valve spindle as an integral piece. Paragraph [12], last sentence, reads: "The sealing surface may be formed on a radially projecting shoulder formed integrally with the valve spindle", which suggests the sealing surface may also be formed by a radially projecting shoulder that is not integral with the valve spindle. The claim language, *per se*, does not require the spindle to be an integral, one piece member, and can reasonably be read as covering a multi-piece spindle. Since Cook et al show a multi-piece spindle, it is believed that the rejection is proper and should be sustained.

In the alternative, washers 36 and 38 can fairly be read as part of the bearing, in that the specification does not explicitly define the bearing as an integral, one piece structure. In that case Cook et al disclose a shaft 24 with a radially extending shoulder 24d formed integrally with the shaft and sealing against element 36 to prevent fluid

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leakage past the bearing, collectively 28, 36, and 38. The claim language would cover such a multi-piece bearing and hence Cook et al anticipate.

Appellant argues for claim 5 in that element 62 of Cook et al is not a nut. However, element 62 looks and acts like a nut as defined in the specification.

Appellant argues for claim 26 in that Cook et al does not teach the bearing abutting the valve spindle, which is recited in claim 1. This claim should stand or fall with claim 1.

Appellant argues for claim 27 in that the bearing of Cook et al is not press-fit and the crimp is not redundant. However, Cook et al disclose the bearing is pressed into the bore and discloses a seal between the OD of the bearing and the ID of the bore. The Examiner is of the opinion that such is a fair disclosure of a press fit bearing and it is inherent to Cook et al that the crimp is redundant.

Appellant argues for claim 28 in that Cook et al does not show "wherein the bearing sleeve comprising a sole bearing structure". As far as this grammatically wanting recitation can be understood it is interpreted to mean that the bearing 28 is the only bearing sleeve at that location.

Appellant argues for claim 29 in that Cook et al do not teach a shoulder on the spindle in direct contact with the bearing, which has been addressed above. Appellant further argues that Cook et al do not show the abutment of the shoulder and the bearing as being within the bore. However, Figure 8 of Cook et al do show the abutment of the shoulder and the bearing as being within the bore.

Appellant argues for claim 31 in that Cook et al do not show a constant diameter from one end to the other. However, the claim does not recite a constant diameter from one to the other, but recites a "generally constant" diameter. The specification gives no guidance on what "generally constant" is supposed to mean and the scope of the claim is reasonably encompassed by Cook et al.

Appellant argues for claim 32 for the same reason as claim 31, that the broad language of the claim is not shown in specific. The Examiner is of the opinion that the broad language of the claim is fairly found in Cook et al.

Appellant argues for claims 11-12 under 35 USC §103 for the same reasons as claim 1, so this rejection should stand or fall with claim 1.

Appellant argues for claim 6 in that the bellows of Cook et al provide a beneficial configuration. However, such a beneficial configuration can also be provided by the spring of Fodor et al in that it is designed for the same high temperature environment.

Appellant argues for claim 7 for the same reasons as claim 1, so this rejection should stand or fall with claim 1. Appellant further argues that the claim recitation of "nickel-chromium-iron alloy" is not taught in the Prior Art. However, paragraph [27] of the instant application, second sentence, discloses that Inconel is a nickel-chromium-iron alloy, and Fodor et al teach a spring made of Inconel.

Appellant's argument here is seen as representative of a tendentious and legalistic prosecution strategy that ignores common sense and the ordinary level of skill in the art. It is believed that the rejection of claim 7 is sound and should be sustained.

Appellant argues for claims 19-22 in that using a ceramic coating as taught by Ong et al would provide no benefit in the apparatus of Cook et al. However, Ong et al teach a sealing means that is equivalent to the sealing means of Cook et al, and using one instead of the other is clearly within the ambit of 103.

Appellant argues for claim 24 because a packing is not disclosed as a seal. However, the word packing is commonly used in the Art as a seal and it should be readily apparent that the purpose of the packing is to seal.

Appellant argues for both claims 24 and 25 because the Ong et al do not show a conical seal. However, Ong et al show both a seal and a conical shape to the seal.

Appellant argues against Thauer in view of Kuramoto as to claim 1 in that Thauer teaches a flange 4 for positioning the bearing 3 and that using the bearing of Kuramoto would destroy the intended use of the bearing of Thauer. The Examiner disagrees. Positioning a bearing in the proper place is routine engineering and is easily accomplished by either of the structures shown in the rejection.

Appellant further argues that there is no need to have an outer seal as taught by Kuramoto since the inner seal of Thauer is adequate, so there is no suggestion to modify Thauer. However, redundancy does not preclude obviousness. Kuromoto teach both inner and outer seals and the use of both with Thauer is seen to be suggested by Kuramoto.

Appellant argues for claims 14 and 27 for a press fit bearing. The Examiner is of the opinion that a routineer in the art would readily appreciate the equivalence of a threaded in bearing and a press fit bearing, and that the rejection is proper.

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Appellant argues for claim 26 and against Thauer in view of Kuramoto in that the bearing sleeve is not positioned between the washer and the valve spindle in the proposed rejection. The Examiner submits that the proposed rejection includes such a feature since that is what is shown in the Prior Art.

Appellant argues for claim 31 and against Thauer in view of Kuramoto in that they do not show a bearing with a constant diameter from one end to the other. However, the claim does not recite a constant diameter from one to the other, but recites a "generally constant" diameter. The specification gives no guidance on what "generally constant" is supposed to mean and the scope of the claim is reasonably encompassed by Thauer, as modified.

Appellant argues for claims 9, 17, 6, and 7 for the same reasons as claim 1. These claims should stand or fall with claim 1.

Appellant's arguments for the remaining dependent claims under 103 and Thauer in view of Kuramoto are duplicative of the previous arguments and reference is made to the responses above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/John Fox/

Primary Examiner, Art Unit 3753

Conferees:

/STEPHEN M HEPERLE/

Supervisory Patent Examiner, Art Unit 3753

/Michael Phillips/

RQAS